



**GROUNDWATER MONITORING REPORT**  
**Number 3 – July 25, 2005**

218-220 Clara Street  
San Francisco, California  
LOP Site Number 11622

Prepared For:

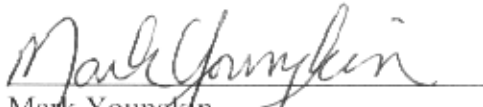
Mr. John Scariot  
8850 El Doric Court  
Gilroy, California, 95020

Prepared By:

Golden Gate Tank Removal, Inc.  
255 Shipley Street  
San Francisco, California 94107

GGTR Project No. 8483  
September 22, 2005

Reviewed By:

  
Mark Youngkin  
Registered Geologist CEG 1380

Authored By:

  
Greti Wolf  
Staff Geologist

# GROUNDWATER MONITORING REPORT

Number 3 – July 25, 2005

218-220 Clara Street, San Francisco, California  
SFDPH LOP Site Number 11622

## Introduction

This report presents the results and findings of the July 25, 2005 quarterly groundwater monitoring and sampling activities conducted by Golden Gate Tank Removal, Inc. (GGTR) at 218-220 Clara Street in San Francisco, California. This monitoring event was the third consecutive monitoring event for the one existing groundwater monitor well (MW1) since its installation and initial sampling conducted at the site in October 2004. The San Francisco Department of Public Health (SFDPH) has designated the site as Local Oversight Program (LOP) Case Number 11622. Figure 1 is a *Site Location Map* of the subject property. Figure 2 is a *Site Vicinity Plan* showing the location of the former underground fuel storage tank and existing groundwater monitor well.

## Site Location and Description

The subject property is located at 218-220 Clara Street, on the northwest side of Clara Street between 5<sup>th</sup> and 6<sup>th</sup> Streets, in the South of Market District of San Francisco, California. The site lies approximately 500 feet (0.1 mile) northwest of Interstate 80, 0.75-mile northeast of State Highway 101, and 0.82 mile west of the San Francisco Bay (China Basin inlet). The elevation of the property is approximately 10 feet above Mean Sea Level (Figure 1). The property consists of a rectangular site occupying 4,996 square feet (0.11 acre) in lot area and has been owned by Mattock Construction Company since February 1969 (San Francisco County Assessor Parcel B3753 L60). At this time, records are not available on previous site ownership or activities of past operation. The subject property is zoned for commercial use. Figure 1 presents a *Site Location Map*. Figure 2 is a *Site Vicinity Plan* of the property showing pertinent site features, property boundaries, and adjacent property locations.

A two-story structure occupies the majority of the property and is currently leased to at least one business enterprise (Escobar; 220 Clara Street). A roll-up door located at the east corner of the building provides vehicular access to the street level portion of the property. The exterior building is of stucco texture. An approximate 6-foot wide sidewalk exists along the Clara Street frontage of the subject site.

The property is relatively flat lying with the topographic relief generally directed towards the southeast (Figure 1), in the direction of the San Francisco Bay. One 480-gallon gasoline

UST was located beneath the concrete sidewalk at exterior eastern corner of the property along Clara Street. The UST was abandoned in place in May 2004 under the supervision of the SFDPH.

### **Site Geology and Hydrogeology**

According to a Geologic Map of the San Francisco-San Jose Quadrangle (California Department of Conservation, 1990), the site is directly underlain by artificial fill and up to approximately 500 feet of Quaternary alluvial deposits (unconsolidated stream and basin deposits) and possibly marine sandstone, shale, conglomerates, greenstone, and serpentinized ultramafic rock (thickness not established) of the Mesozoic Franciscan Complex. Shallow subsurface soil reported at the site during UST abandonment activities was a moist, brown sand (and debris) to approximately 6 feet below grade overlying a dense silty clay (Bay Mud) up to approximately 9 feet below grade (fbg). The geologic map also indicates that the site is situated approximately 8 miles northeast and 10.5 miles southwest of the San Andreas and Hayward Fault Zones, respectively.

The site is in the *San Francisco Bay Central Groundwater Basin (Basin 3) - Downtown Sub Basin* according to the Water Quality Control Plan prepared by the California Regional Water Quality Control Board (CRWQCB, 1995/2000). Groundwater in this basin is designated beneficial for industrial and agricultural uses only, and is typically not considered a potential source of domestic drinking water.

The regional groundwater flow direction in the vicinity of the site is estimated to be toward the southeast, in the general direction of the China Basin inlet (Mission Creek Marina) and decreasing topographic relief. The depth to groundwater at the site appeared to stabilize in the UST cavity during UST abandonment and sampling activities at 9 fbg. *No site specific groundwater gradient data exist at this time; however, based upon gradient data obtained from monitor wells situated directly northwest of the site, between Folsom and Shipley Streets, groundwater flow at this vicinity location has consistently been directed toward the southeast.* The nearest surface water body is the Mission Creek Marina of the China Basin portion of the San Francisco Bay, located approximately 2,900 feet (0.55 mile) southeast of the subject property (Figure 1).

## **Site Subsurface Conditions**

Shallow subsurface soil texture described by GGTR field personnel during monitor well installation activities at the site in September 2004, was predominantly a moist to wet, dark grey, clayey, silty, fine-grained sand to the total explored sample depth of 15 feet below grade (fbg). A concrete or rock layer, assumed to be the historical roadway underlying the existing street pavement, exists at approximately 5 fbg as evidenced by numerous borehole obstructions in the parking lanes along both sides of Clara Street. The static groundwater level measured during monitor well sampling in October 2004 and January 2005 ranged between 7.26 and 8.45 fbg. As discussed above, a site-specific groundwater flow direction and gradient was not established at this time.

## **Environmental Site History**

### **UST Closure Activities – April 2004**

In April 2004, GGTR was contracted to remove one 480-gallon underground gasoline storage tank (UST) from the subject property at the location shown in Figure 2. Based on the presence of a utility pole overlying the northeast end of the UST, the SFDPH, in a revised letter dated April 7, 2004, authorized that the tank be closed in place. On May 3, 2004, under the direct supervision of Ms. Elizabeth Leong of the SFDPH, Hazardous Materials Unified Program Agency, the UST was abandoned in place by filling the tank completely with concrete. Grab groundwater samples were collected from the UST excavation prior to (4/9/2004) and following (4/22/2004) purging of the groundwater that accumulated within the excavation. Analytical results are presented in Table 1, attached. Additional details are in GGTR's June 3, 2004 *Tank Closure Report*.

### **Drilling and Monitor Well Installation – September 2004**

Based on review of the June 2004 Tank Closure Report, the SFDPH-LOP, in a letter dated June 16, 2004, requested that additional site investigation and/or remedial activities be conducted at the site to assess the extent of groundwater contamination in the vicinity of the former UST. On June 10, 2004, GGTR submitted their *Work Plan for Monitor Well Installation and Sampling*, which was subsequently approved by the SFDPH-LOP, in a letter dated June 18, 2004.

In September 2004, GGTR obtained a Well Construction Permit from the SFDPH, Monitoring Wells and Water Quality Section and obtained a Street Excavation Permit from the San Francisco Department of Public Works. On September 30, 2004, GGTR contracted GREGG Drilling & Testing, Inc. (GREGG) of Martinez, California (State Contractors C-57 License #485165) to perform the soil boring and well installation activities at the site. B1/MW1 was placed adjacent to the south corner of the former UST excavation. Mr. Albert Lee and Ms. Stephanie Cushing of the SFDPH-LOP witnessed all drilling activities.

Soil samples were continuously collected in B1 between 5 and 15 fbg by hydraulically pushing (direct push technology) a 2.5-inch-diameter, butyrate plastic tube-lined, remote core sampler (4-foot length) approximately 48 inches into relatively undisturbed soil. GGTR also collected four discrete soil samples from the drummed soil cuttings generated during drilling activities. On September 30, 2004, GGTR submitted the soil samples under formal chain-of-custody command to North State Laboratory (NSL; CA ELAP 31753) of South San Francisco, California for analysis. All discrete soil boring samples were analyzed by the following California Department of Health Services approved analytical methods.

- TPH-G (EPA Methods 8015M/8021B)
- BTEX & MTBE (EPA Method 8015M/8021B)

The soil sample collected in B1 at 9.5 fbg was additionally analyzed for Volatile Organic Compounds (VOCs) and Fuel Oxygenates by EPA Method 8260. The discrete soil samples collected from the drummed soil cuttings were composited and also analyzed for TPH-G, BTEX, and MTBE, as well as Total Threshold Limit Concentration (TTLC) Lead by EPA Method 6010B ICAP. Based on the elevated TTLC lead concentration exceeding 50 mg/kg, the stockpile composite sample was additionally analyzed for lead (EPA Method 6010B/ICAP) using: 1) Soluble Threshold Limit Concentration (STLC) by California Title 22 Waste Extraction Test, and 2) Toxicity Characteristic Leaching Procedure (TCLP) by EPA Method 1311/SW6010B. NSL performed all initial sample extraction and volatile analysis procedures by October 6, 2004, which is in conformance with the maximum 14 day hold time for the volatile analyses. Sample soil not utilized for analysis was transferred to a 55-gallon D.O.T.-approved steel drum. Analytical results are included in Table 1.

Following completion of soil sampling activities, GREGG extracted the center drill rods from within the hollow stem augers and advanced factory-sealed, 2-inch-diameter, flush-threaded, Schedule 40 polyvinyl chloride (PVC) well casing to the total depth of the borehole. Monitor well casing construction consisted of 10 feet of screened PVC well casing (0.010 inch slot size) extending from 5 to 15 fbg and approximately 4.75 feet of blank PVC riser casing extending from 0.25 to 5 fbg. A locking compression cap and threaded bottom cap were placed at the top and bottom, respectively, of the well casing.

#### **Monitor Well Development and Sampling – October 2004**

On October 5, 2004, GGTR developed MW1 in general accordance with regulatory corrective action guidelines. Well development is performed to: 1) potentially restore the natural hydraulic conductivity of the surrounding formation to its original condition and 2) displace any residual annular fines and remove sediment from the well casing to ensure turbid-free, representative groundwater samples during well sampling activities. GGTR surged the formation groundwater in the well for approximately 20 minutes using a 2-inch-diameter surge block. Surging was performed in approximate 2- to 3-foot intervals

throughout the entire screened section of the well, between the water table level and total depth of well casing. Because of the high yielding formation observed in the well, import water was not required during the well surging activities.

GGTR subsequently purged  $\geq 10$  well casing volumes (@ 12.5 gallons) of groundwater from the well using a centrifugal, direct current purge pump and factory-sealed 0.5-inch-diameter, polyethylene purge tubing. Groundwater was directly transferred to a 55-gallon storage drum. Purging continued until the groundwater was approximately free of suspended fine sediments. On October 7, 2004, GGTR returned to the site and performed initial groundwater sampling activities at the subject property. The groundwater sample was analyzed for the following Department of Health Services approved methods.

- TPH-G (EPA Methods 8015M/8021B)
- BTEX (EPA Methods 8015M/8021B)
- MTBE (EPA Methods 8015M/8021B)
- VOCs (EPA Method 8260B)

The groundwater sample was additionally analyzed for Total Dissolved Solids (TDS; EPA Method 160.1) to assess groundwater quality beneath the site. Laboratory analytical and fluid-level monitoring results are presented in the attached Tables 2 and 3, respectively.

Based on review of GGTR's January 17, Report of Monitor Well Installation and Sampling Activities, the SFDPH-LOP, in their letter dated January 20, 2005, concurred with GGTR's recommendation for continued quarterly groundwater monitoring for at least one year.

#### **Wellhead Elevation and Coordinate Survey – December 2004**

On December 20, 2004, Virgil Chavez Land Surveying surveyed the TOC and grade elevation and relative latitude, longitude, and coordinates of the monitor well location at the subject property. Virgil Chavez is a Professional Land Surveyor (PLS No. 6323) licensed in the State of California. The benchmark for this survey was a crow's foot cut on the outer rim of a catch basin located at the northwest corner of 5<sup>th</sup> & Harrison Streets in San Francisco, California, with an elevation of 7.21 feet above Mean Sea Level (NGVD 29). The wellhead elevation and coordinate survey were conducted in general accordance with the State GeoTracker AB2886. Wellhead elevation data for MW1 is included in Table 3.

#### **Quarterly Monitoring and Sampling – January/April 2005**

On January 13 and April 15, 2005, GGTR conducted First and Second Quarters 2005 groundwater monitoring and sampling at the site. Laboratory analytical and fluid-level monitoring results for each event are included in Tables 2 and 3, respectively.

## **QUARTERLY GROUNDWATER MONITORING**

**July 25, 2005**

### **Scope**

The scope of the work covered in this report includes the following:

- Monitoring, purging and sampling of MW1
- Groundwater sample laboratory analysis
- Waste management
- Data interpretation and report preparation

### **Groundwater Sampling Field Procedures**

GGTR conducted quarterly groundwater monitoring and sampling activities at the subject property on July 25, 2005, in accordance with the requirements and procedures of the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region and the SFDPH-LOP. Prior to purging and sampling of MW1, GGTR measured and recorded the depth to groundwater and presence of free floating product relative to the top of well casing using a Keck® oil/water interface meter. Measurements were recorded to the nearest 0.01 foot. GGTR also monitored and recorded the dissolved oxygen (DO: in-situ) content using a YSI-55® Dissolved Oxygen Meter.

GGTR then purged  $\geq 3$  well casing volumes of groundwater from MW1 using a direct current, centrifugal purge pump and simultaneously measured the purge water's pH, temperature, and specific conductivity to verify that these parameters had generally stabilized. Following purging, the purge water (@ 5 gallons) was transferred to a 55-gallon D.O.T.-approved steel drum.

After recharge of approximately 80% of the groundwater column in MW1, GGTR collected a groundwater sample by lowering a 2-inch-diameter, disposable, bottom-fill, acrylic bailer to just below the air-water interface. GGTR then carefully decanted the sample from the bailer into the appropriate laboratory sample containers. All volatile organic analysis (VOA) vials were sealed with a threaded cap, inverted, and checked to insure that no entrapped air was present. The groundwater samples were then appropriately labeled and immediately stored in a cooler chilled to approximately 4°C.

All downhole monitoring and sampling equipment was subsequently decontaminated using an Alconox® wash solution and double rinsed with clean, potable water. GGTR transferred the wash and rinse water (@ 5 gallons) to the 55-gallon storage drum, which was appropriately labeled and stored onsite in a secure area at GGTR.

## Groundwater Sample Analysis

On July 25, 2005, GGTR submitted the groundwater samples collected from MW1 to Entech Analytical Labs, Inc., a California State-certified (CA ELAP# 2346) laboratory in Santa Clara, California for laboratory analysis of the following fuel hydrocarbon constituents:

- Gasoline Range Organics (TPH-G; Methods SW8020F)
- Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX; Methods SW8020F)
- Methyl Tertiary-Butyl Ether (MTBE; Methods SW8020F)

Entech performed all volatile analyses by July 27, 2005, which is in conformance with the maximum 14-day hold time for these analyses. Quality Assurance and Quality Control (QA/QC) details are shown on the appended laboratory certificates of analysis.

## Results of Groundwater Sampling and Laboratory Analysis

The results of the groundwater monitoring and laboratory analyses (performed to date) are summarized on the attached Table 2. A copy of the official laboratory Certificate of Analysis and the associated Chain-of-Custody Form are attached. Documentation of the purging and sampling activities performed during this event is contained in the attached Fluid-Level Monitoring and Well Purging/Sampling Data Sheets. The table shown below summarizes the most recent analytical results for the groundwater samples collected in MW1.

**Quarterly Groundwater Sampling Results – July 25, 2005**

Sample ID	TPH-G (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)
MW-1	470	0.80	ND	0.50	4.2	ND

**NOTES:** TPH-G - Total Petroleum Hydrocarbons as Gasoline / Gasoline Range Organics  
B,T,E,X - Benzene, Toluene, Ethylbenzene, Total Xylenes  
MTBE - Methyl Tertiary Butyl Ether  
ug/L – micrograms per liter (parts per billion)  
ND - not detected above laboratory reporting limit

GGTR uploaded all groundwater sample analytical results associated with the July 25, 2005 event in electronic deliverable format to the State Water Resources Control Board's GeoTracker Database System, pursuant to State Assembly Bill 2886. The GeoTracker Upload Confirmation Number is **3323836386**. A confirmation report copy corresponding to Lab Number/Submittal Title 44536 (July 25, 2005 Analytical Data) is attached.



## **Results of Groundwater Measurements**

As mentioned above, prior to purging and sampling the groundwater in MW1, GGTR monitored the depth to water and presence of free product, as well as the DO of the groundwater in MW1. Because only one well is used to monitor the site, no groundwater gradient or flow direction was calculated across the site. Table 3 attached, presents the fluid-level and monitoring data measured during the July 25, 2005 event as well as fluid-levels measured in MW1 during initial well development and monitoring in October 2004, and January and April 2005.

The relative groundwater elevation presented in Table 2 is referenced to Mean Sea Level. In December 2004, Virgil Chavez Land Surveying (PLS 6323) surveyed the wellhead TOC and Rim elevation (NGVD 29), latitude and longitude, and coordinate locations (NAD83) of MW1 pursuant to the State GeoTracker Database system. The regional groundwater flow direction in the vicinity of the site is estimated to be toward the southeast, toward the San Francisco Bay (and Islais Creek Channel Inlet) and in the general direction of decreasing topographic relief.

GGTR uploaded the fluid-level monitoring data associated with the July 25, 2005 event in electronic deliverable format to the State GeoTracker Database System. The GeoTracker Upload Confirmation Number is **7746769547**. An AB2886 Electronic Delivery confirmation report copy (GEO\_Well) is attached.

## **Discussion of Groundwater Monitoring & Sampling Results**

The depth to groundwater (and associated groundwater elevation) measured during this event was 8.15 fbg (0.76 feet MSL). No free-phase petroleum product was detected on the surface of the groundwater in MW1. A slight hydrocarbon odor was detected in the groundwater sample in MW1.

The DO measured in MW1 [0.99 milligrams per liter (mg/L) / 11.3 %] indicates that aerobic biodegradation of hydrocarbons maybe potentially occurring at this time in the shallow groundwater in the direct vicinity of the UST cavity. The oxidation-reduction potential was not measured during this event.

At the completion of the purge event, the groundwater contained a pH, specific conductivity, and temperature of 7.75, 822 micromhos per centimeter ( $\mu\text{mhos/cm}$ ), and 18.7 Centigrade degrees, respectively. As reported previously, the TDS concentration reported in MW1 during the October 7, 2004 (initial sampling) event was 633,000 ug/L, which exceeds the California Regional Water Quality Control Board's Municipal Supply Water Quality Objective (CRWQCB-MSWQO) listed for this constituent [500,000 ug/L (Secondary MCL)]. The specific conductivity measured during this event does not exceed the CRWQCB-MSWQO listed for this constituent [900  $\mu\text{mhos/cm}$  (Secondary MCL)].

## **Discussion of Groundwater Sample Analytical Results**

The groundwater sample contained 470 ug/L TPH-G (as analyzed by EPA Method 8020), which has decreased significantly since the April 2005 event [713 micrograms per liter (ug/L)], and has continued to decrease since the January 2005 event. The benzene concentration measured in MW1 was 0.8 ug/L. The TPH-G and benzene concentrations are slightly below the CRWQCB February 2005 Tier 1 Environmental Screening Level (ESL) listed for each constituent (500 ug/L for TPH-G and 46 ug/L for benzene), for groundwater <10 fbg that is *not* a threatened drinking water resource (See Table 2). The BTEX concentrations measured in MW1 have decreased since the April 2005 event, and do not exceed the respective CRWQCB Tier 1 ESL or CRWQCB-MSWQO listed for each constituent (See Table 2). The MTBE concentration measured in the groundwater sample collected in MW1 remains below the respective laboratory reporting limit (<0.5 ug/L for MTBE). No Primary or Secondary MCL currently exists for TPH-G.

## **Conclusions/Recommendation**

As required by the SFDPH-LOP in their January 20, 2005 directive letter, MW1 should be monitored and sampled for at least one additional quarter, to further assess groundwater quality through one complete hydrologic year (October 2004 to October 2005). The next scheduled quarterly monitoring event should occur in late October 2005. The groundwater samples collected during this event will continue to be analyzed for TPH-G, BTEX, and MTBE (EPA Methods 8015M/8021B). Monitoring of the depth to water and presence of free product in each well will continue to be performed using an oil/water interface probe. GGTR will continue to monitor the groundwater in each well (in-situ) for DO and oxidation-reduction potential to further evaluate the biodegradation potential.

## **Waste Management**

The well purge water and equipment wash and rinse water generated during the July 25, 2005 (approximately 10 gallons) monitoring event was transferred to a 55-gallon, D.O.T.-approved steel drum, appropriately labeled, and transported to GGTR's storage yard (Clara Street). The drum will remain onsite at GGTR in a secure area for use with future groundwater monitoring activities, if warranted. The waste liquid will be profiled and transported under uniform waste manifest to a State-licensed facility for disposal or recycling.

## **Report Distribution**

This report and all future report correspondence associated with GGTR Project 8348 will be submitted to:

San Francisco Department of Public Health  
Local Oversight Program  
1390 Market Street, Suite 210  
San Francisco, CA 94102  
*Attention: Ms. Stephanie K.J. Cushing*

*(1 Hard Copy; Unbound)  
(1 Electronic Copy via GeoTracker)*

Mr. John Scariot  
8850 El Doric Court  
Gilroy, California, 95020

*(2 Hard Copies+ CD; Bound)*

## REFERENCES

California Division of Mines & Geology, 1990. Geologic Map of the San Francisco-San Jose Quadrangle, Wagner, D.L., Bortugno, E.J., and McJunkin, R.D.

California Regional Water Quality Control Board, San Francisco Bay Region. Application of Environmental Screening Levels and Decision Making at Sites with Impacted Soil and Groundwater; Volume 1: Summary Tier 1 Lookup Tables, July 2003 – Interim Final Guidance.

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GGTR, 2005. Groundwater Monitoring Report, Number 1 – January 13, 2005; 218-220 Clara Street, San Francisco, California. GGTR Project No. 8483. January 31, 2005.

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GGTR, 2005. Groundwater Monitoring Report, Number 1 – January 13, 2005; 218-220 Clara Street, San Francisco, California. GGTR Project No. 8483. January 31, 2005.

## **ATTACHMENTS**

**Figures**

**Tables**

**Laboratory Certificate of Analysis**

**AB2886 GeoTracker Upload Confirmation Forms**

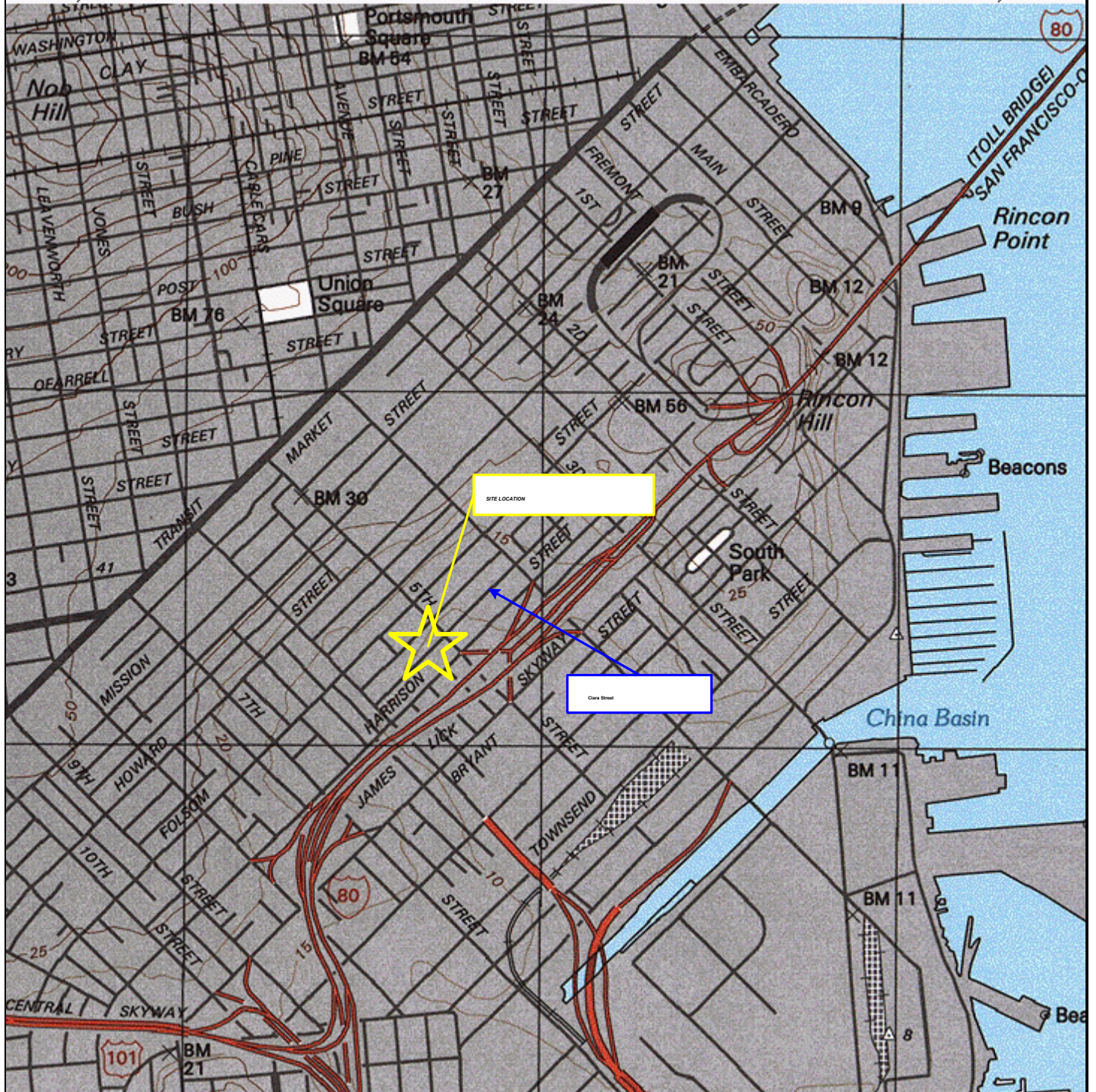
**Fluid-Level Monitoring Data Sheet**

**Well Purging/Sampling Data Sheet**



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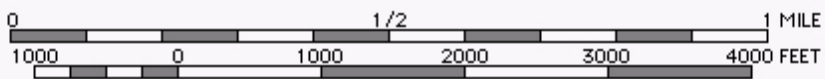
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37°46'03", 122°24'58" NAD83

37°46'03", 122°22'53"

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GOLDEN GATE TANK REMOVAL, INC.

255 Shipley Street

San Francisco, CA 94107

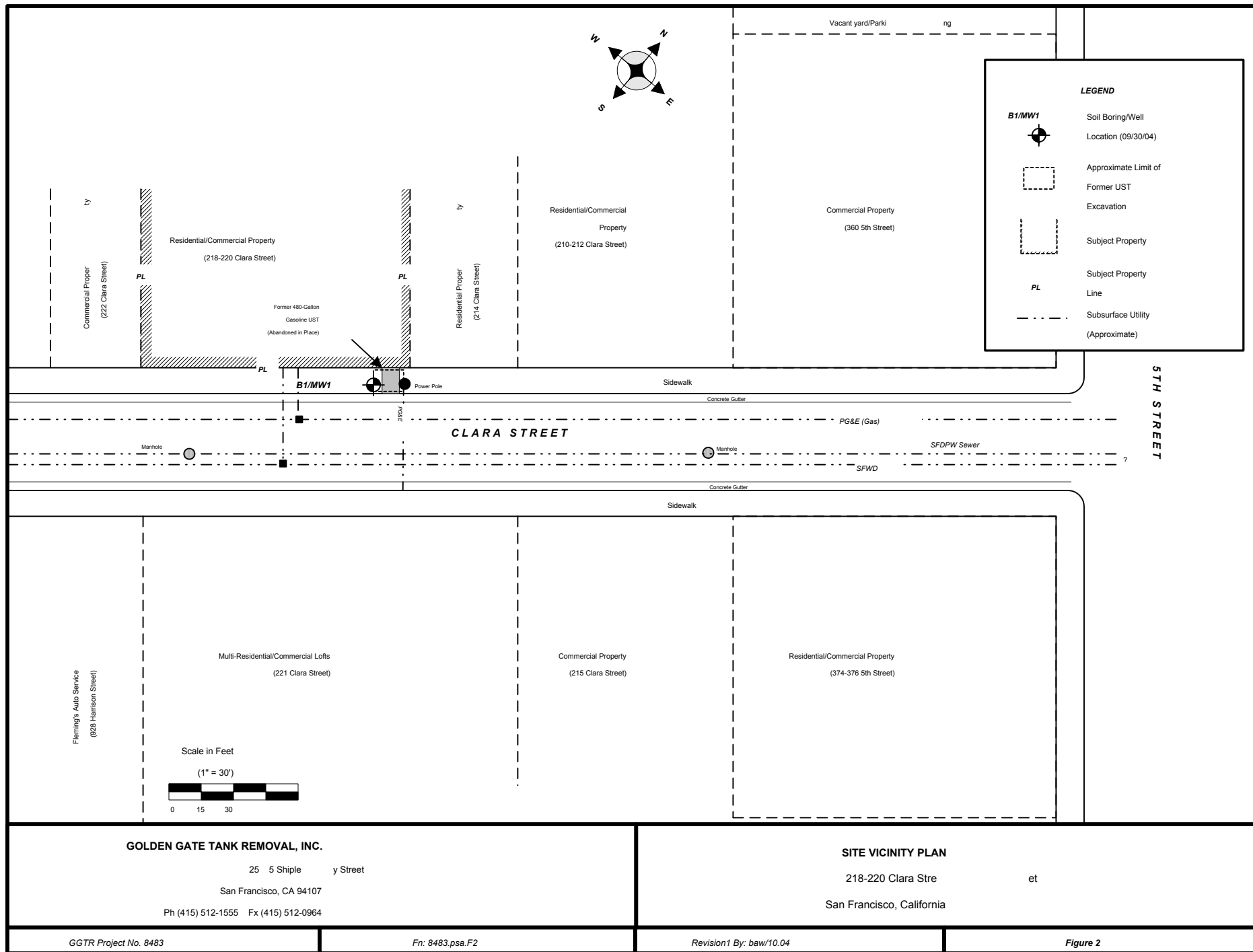
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SITE LOCATION MAP

218-220 Clara Street

San Francisco, California





**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**218-220 Clara Street, San Francisco, California**

Sample ID	Sample Date	Sample Depth (fbg)	TPH-G (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	Total Pb (mg/kg)
8483-SP	04/09/04	Stockpile	1.01	ND	ND	ND	ND	ND	59.7
8483-B1-5.5	09/30/04	5.5	ND	ND	ND	ND	ND	ND	--
8483-B1-7.5		7.5	1,880	ND	ND	ND	17.1	ND	--
8483-B1-9.5 <sup>1,2</sup>		13.5	2.17	ND (0.028) <sup>3</sup>	0.012 (0.093) <sup>2</sup>	0.008 (0.032) <sup>2</sup>	0.038 (0.229) <sup>2</sup>	ND (ND) <sup>2</sup>	--
8483-B1-13.5		13.5	1,350	ND	ND	ND	0.020	ND	--
8483-ASC		NA (Soil Cuttings)	22,700	ND	0.268	0.162	0.872	ND	51.3 <sup>4</sup>
Laboratory Reporting Limit			1.0	0.005	0.005	0.005	0.005	0.005	1.0
CRWQCB July 2003 Tier 1 ESL – Shallow Soil			100/100	0.045/0.18	2.9/9.3	3.3/4.7	1.5/1.5	0.023/2.0	200/200
CRWQCB July 2003 Tier 1 ESL – Deep Soil			100/400	0.044/0.18	2.9/9.3	3.3/4.7	1.5/1.5	0.023/2.0	750/750

**NOTES:** TPH-G = Total Petroleum Hydrocarbons as Gasoline (EPA Methods 8015M/8021B)

Benzene, Toluene, Ethylbenzene, and Total Xylenes by EPA Methods 8015M/8021B

MTBE = Methyl Tertiary-Butyl Ether (EPA Methods 8015M/8021B)

Total Lead by EPA Method 3050/6010B ICAP

8483-SP = stockpile composite sample collected during May 2004 UST abandonment activities

fbg = feet below grade

mg/kg = milligrams per kilogram (equivalent to parts per million)

ND = Non-Detectable; Concentration Below Laboratory Reporting Limit

-- = not analyzed for this constituent

CRWQCB RBSL = California Regional Water Quality Control Board's Tier 1 Risk Based Screening Level; Levels shown are for **shallow soil < 10 fbg (3 meters)** and **deep soil > 10 fbg (3 meters)**, where groundwater **IS / IS NOT** potential source of drinking water at sites with *residential* land usage

<sup>1</sup> = sample contained following VOCs (EPA method 8260), in mg/kg: 0.028 benzene, 0.093 toluene, 0.032 ethylbenzene, 0.229 total xylenes, 0.011 isopropylbenzene, 0.024 n-propylbenzene, 0.203 1,3,5-trimethylbenzene, 0.069 1,2,4-trimethylbenzene, 0.013 sec-butylbenzene, and 0.029 naphthalene

<sup>2</sup> = sample additionally analyzed for Fuel Oxygenates by EPA Method 8260 (All results ND<<0.500 mg/kg)

<sup>3</sup> = associated concentration, as confirmed by EPA Method 8260 (VOC)

<sup>4</sup> = sample additionally analyzed for STLC Lead (5.61 mg/l; CA Title 22 WET/6010B ICAP) and TCLP Lead (ND; 6010B ICAP)



**TABLE 2**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
**218-220 Clara Street, San Francisco, California**

Boring/Well ID	Sample ID	Sample Date	TPH-G (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)	Fuel Oxygenates (ug/L)	Lead (ug/L)
UST Excavation	8483-WATER	04/09/04	7260	57.9	9.2	125	60.3	ND	--	0.29
UST Excavation	8483-W2	04/22/04	4550	28.7	13	37.1	23.5	ND	--	ND
<b>MW1</b>	8483-MW1 <sup>1,2</sup>	10/07/04	760	1.5	2.8	1.8	6.3	ND <sup>3</sup>	--	--
	8483-MW1	1/13/05	1400	ND	6.1	2.1	9.2	ND	--	--
	8483-MW1	4/15/05	713	ND	1.7	2.7	1.2	ND	ND	--
	<b>8483-MW1</b>	<b>7/25/05</b>	<b>470</b>	<b>0.80</b>	<b>ND</b>	<b>0.50</b>	<b>4.2</b>	<b>ND</b>	<b>--</b>	<b>--</b>
Laboratory Reporting Limit			50	0.5	0.5	0.5	1.0	0.5	500	500
CRWQCB MSWQO (Primary MCL)			None	1	150	700	1,750	5 <sup>4</sup>	2	2 <sup>5</sup>
<b>CRWQCB February 2005 ESL</b>			<b>100/500</b>	<b>1.0/46</b>	<b>40/130</b>	<b>30/290</b>	<b>13/13</b>	<b>5/1,800</b>	<b>Varies</b>	<b>2.5/2.5</b>

**NOTES:** TPH-G = Total Petroleum Hydrocarbons as Gasoline (EPA Methods 8015M/8021B)

Benzene, Toluene, Ethylbenzene, and Total Xylenes by EPA Methods 8015M/8021B

MTBE = Methyl Tertiary-Butyl Ether (EPA Methods 5030B/8260B)

Lead (TTLC) by EPA Method 6010B ICAP

ug/L = micrograms per liter (equivalent to parts per billion)

ND = Non-Detectable; Concentration Below Laboratory Reporting Limit

NC = No Criteria

CRWQCB MSWQO (Primary MCL) = California Regional Water Quality Control Board, Municipal Supply Water Quality Objective;  
Primary Maximum Contaminant Level

CRWQCB RBSL = California Regional Water Quality Control Board's Risk Based Screening Level; Levels shown are  
for **Groundwater < 10 fbg (3 meters)** where groundwater **IS / IS NOT** a threatened drinking water resource.

<sup>1</sup> = Sample also contained the following VOC concentrations (EPA method 8260), in ug/l: 12 acetone, 5 isopropylbenzene, 1 n-propylbenzene,  
and 2 n-butylbenzene

<sup>2</sup> = Sample also analyzed for Total Dissolved Solids by EPA Method 160.1 (Result = 633,000 ug/l)

<sup>3</sup> = Confirmed by EPA method 8260

<sup>4</sup> = Established Secondary MCL

<sup>5</sup> = California Public Health Goal in Drinking Water (Office of Environmental Health Hazard Assessment)

**TABLE 3**  
**FLUID-LEVEL AND MONITORING DATA**  
**218-220 Clara Street, San Francisco, California**

Boring/Well ID	Measurement Date	Depth To Product, Feet (TOC/FBG)	Depth To Water, Feet (TOC/FBG)	Product Thickness (Feet)	Well Casing Elevation <sup>1</sup> , Feet MSL (RIM/TOC)	Relative Groundwater Elevation <sup>1</sup> (Feet/MSL)
MW1	10/05/04	--	8.20/8.45	--	8.91/8.66	0.71
	10/07/04	--	8.20/8.45	--	8.91/8.66	0.71
	1/13/05	--	7.1/ 7.35	--	8.91/8.66	1.56
	4/15/05	--	7.1/ 7.35	--	8.91/8.66	1.56
	7/25/05	--	8.15/ 8.40	--	8.91/8.66	0.76

Notes: TOC = Measurement relative to Top of Well Casing (North Side)  
 FBG = Feet Below Grade  
 MSL = Mean Sea Level

<sup>1</sup> = Well Casing and Relative Groundwater Elevations referenced to benchmark (Elev. = 7.21 Feet, MSL), which was a crows foot cut on outer rim of catch basin located at NW corner of 5<sup>th</sup> & Harrison Streets, San Francisco, CA; Wellhead elevation survey conducted December 20, 2004 by Virgil Chavez Land Surveying (California LLS No. 6232); Associated latitude, longitude, and coordinates were surveyed relative to TOC and based on California State Coordinate System.

# Entech Analytical Labs, Inc.

---

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Brent Wheeler  
Golden Gate Tank Removal  
255 Shipley Street  
San Francisco, CA 94107

**Certificate ID: 44536 - 7/27/2005 5:25:05 PM**

**Order Number: 44536**  
**Project Name: 218 Clara Strret**  
**Project Number: 8483**

**Date Received: 7/25/2005 2:50:20 PM**  
**P.O. Number: 8483**

## Certificate of Analysis - Final Report

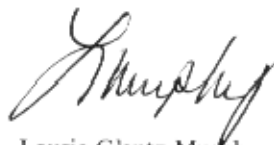
On July 25, 2005, sample was received under chain of custody for analysis.

Entech analyzes samples "as received" unless otherwise noted. The following results are included:

<u>Matrix</u>	<u>Test</u>	<u>Comments</u>
Liquid	Electronic Deliverables Gas/BTEX/MTBE	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).  
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,



Laurie Glantz-Murphy  
Laboratory Director

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Golden Gate Tank Removal  
255 Shipley Street  
San Francisco, CA 94107  
Attn: Brent Wheeler

Project ID: 8483  
Date Received: 7/25/2005  
P.O. Number: 8483  
Sample Collected by: client

## Certificate of Analysis - Data Report

Lab # : 44536-001      Sample ID: 8483-MW1      Matrix: Liquid      Sample Date: 7/25/2005      9:30 AM

EPA 8015 MOD. (Purgeable)									TPH as Gasoline
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	470		1	50	µg/L	N/A	N/A	7/25/2005	WGC4050725
TPH as Gasoline reported value is a result of heavy hydrocarbons within the TPH as Gasoline quantitation range.									

Surrogate	Surrogate Recovery	Control Limits (%)	Analyzed by: mruan
4-Bromofluorobenzene	119	65 - 135	Reviewed by: bdhabalia

EPA 8020								BTEX	
Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	0.80		1	0.50	µg/L	N/A	N/A	7/25/2005	WGC4050725
Toluene	ND		1	0.50	µg/L	N/A	N/A	7/25/2005	WGC4050725
Ethyl Benzene	0.50		1	0.50	µg/L	N/A	N/A	7/25/2005	WGC4050725
Xylenes, Total	4.2		1	0.50	µg/L	N/A	N/A	7/25/2005	WGC4050725
Methyl-t-butyl Ether	ND		1	1.0	µg/L	N/A	N/A	7/25/2005	WGC4050725
Surrogate	Surrogate Recovery	Control Limits (%)						Analyzed by: mruan	
4-Bromofluorobenzene	114	65 - 135						Reviewed by: bdhabalia	

Detection Limit = Detection Limit for Reporting.

D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.

ND = Not Detected at or above the Detection Limit.

Qual = Data Qualifier

7/27/2005 5:25:06 PM - dba

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Method Blank - Liquid - EPA 8015 MOD. (Purgeable) - TPH as Gasoline

QC Batch ID: WGC4050725

Validated by: bdhabalia - 07/27/05

QC Batch Analysis Date: 7/25/2005

Approved by: bdhabalia - 07/27/05

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	94.2	65 - 135

Method Blank - Liquid - EPA 8020 - BTEX

QC Batch ID: WGC4050725

Validated by: bdhabalia - 07/27/05

QC Batch Analysis Date: 7/25/2005

Approved by: bdhabalia - 07/27/05

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	95.4	65 - 135

Method Blank - Liquid - EPA 8020 - MTBE by EPA 8020

QC Batch ID: WGC4050725

Validated by: bdhabalia - 07/27/05

QC Batch Analysis Date: 7/25/2005

Approved by: bdhabalia - 07/27/05

Parameter	Result	DF	PQLR	Units
Methyl-t-butyl Ether	ND	1	1.0	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	95.4	65 - 135

# Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054

Phone: (408) 588-0200

Fax: (408) 588-0201

Laboratory Control Sample / Duplicate - Liquid - EPA 8015 MOD. (Purgeable) - TPH as Gasoline

QC Batch ID: WGC4050725

Reviewed by: bdhabalia - 07/27/05

QC Batch ID Analysis Date: 7/25/2005

Approved by: bdhabalia - 07/27/05

## LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<50	250	249	µg/L	99.6	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	93.5	65 - 135

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<50	250	258	µg/L	103	3.6	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	91.8	65 - 135

Laboratory Control Sample / Duplicate - Liquid - EPA 8020 - BTEX

QC Batch ID: WGC4050725

Reviewed by: bdhabalia - 07/27/05

QC Batch ID Analysis Date: 7/25/2005

Approved by: bdhabalia - 07/27/05

## LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	8.0	7.55	µg/L	94.4	65 - 135
Ethyl Benzene	<0.50	8.0	7.28	µg/L	91.0	65 - 135
Toluene	<0.50	8.0	7.56	µg/L	94.5	65 - 135
Xylenes, total	<0.50	24	21.9	µg/L	91.4	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.4	65 - 135

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	8.0	8.01	µg/L	100	5.9	25.0	65 - 135
Ethyl Benzene	<0.50	8.0	7.54	µg/L	94.2	3.5	25.0	65 - 135
Toluene	<0.50	8.0	7.87	µg/L	98.4	4.0	25.0	65 - 135
Xylenes, total	<0.50	24	23.2	µg/L	96.7	5.6	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	97	65 - 135

Laboratory Control Sample / Duplicate - Liquid - EPA 8020 - MTBE by EPA 8020

QC Batch ID: WGC4050725

Reviewed by: bdhabalia - 07/27/05

QC Batch ID Analysis Date: 7/25/2005

Approved by: bdhabalia - 07/27/05

## LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Methyl-t-butyl Ether	<1.0	8.0	7.16	µg/L	89.5	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	96.4	65 - 135

## LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Methyl-t-butyl Ether	<1.0	8.0	7.92	µg/L	99.0	10	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	97	65 - 135



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**Date/Time of Submittal:** 9/21/2005 1:22:38 PM

**Facility Global ID:** T0607547197

**Facility Name:** COMMERCIAL PROPERTY

**Submittal Title:** 44536:GW Sample Analytical Data - MW1(7/25/05)

**Submittal Type:** GW Monitoring Report

[Click here to view the detections report for this upload.](#)

<b>COMMERCIAL PROPERTY</b> 218 CLARA STREET SAN FRANCISCO, CA 94107	<b>Regional Board - Case #: 38-2284</b> SAN FRANCISCO BAY RWQCB (REGION 2) - (GVL) <b>Local Agency (lead agency) - Case #: 11622</b> SAN FRANCISCO COUNTY LOP - (SC)
---	---

CONF #	TITLE	QUARTER
3323836386	44536:GW Sample Analytical Data - MW1(7/25/05)	Q3 2005
<b>SUBMITTED BY</b> Brent Wheeler	<b>SUBMIT DATE</b> 9/21/2005	<b>STATUS</b> PENDING REVIEW

### SAMPLE DETECTIONS REPORT

# FIELD POINTS SAMPLED	1
# FIELD POINTS WITH DETECTIONS	1
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	1
SAMPLE MATRIX TYPES	WATER

### METHOD QA/QC REPORT

METHODS USED	CATPH-G,SW8020
TESTED FOR REQUIRED ANALYTES?	N
MISSING PARAMETERS NOT TESTED:	
- CATPH-G REQUIRES TPHC6C12 TO BE TESTED	
LAB NOTE DATA QUALIFIERS	N

### QA/QC FOR 8021/8260 SERIES SAMPLES

TECHNICAL HOLDING TIME VIOLATIONS	0
METHOD HOLDING TIME VIOLATIONS	0
LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT	0
LAB BLANK DETECTIONS	0
DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING?	
- LAB METHOD BLANK	n/a
- MATRIX SPIKE	n/a
- MATRIX SPIKE DUPLICATE	n/a
- BLANK SPIKE	n/a
- SURROGATE SPIKE	n/a

### WATER SAMPLES FOR 8021/8260 SERIES

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%	n/a
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%	n/a
SURROGATE SPIKES % RECOVERY BETWEEN 85-115%	n/a



BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a

**SOIL SAMPLES FOR 8021/8260 SERIES**

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% n/a

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% n/a

SURROGATE SPIKES % RECOVERY BETWEEN 70-125% n/a

BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% n/a

**FIELD QC SAMPLES**

<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS &gt; REPD</u>
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

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***Golden Gate Tank Removal, Inc.***

## FLUID-LEVEL MONITORING DATA

Project No: 8483 Date: 7-25-05

Project/Site Location: 218 - 220 CLARA ST SF CA

Technician: WOLF Instrument: KEIC

[illegible]

Measurements referenced to: ☒ TOC ☐ Grade.

Page 1 of 1

# Golden Gate Tank Removal, Inc.

## WELL PURGING/SAMPLING DATA

Project Number: 8483 Date: 7-25-05

Project / Site Location: CLARA STREET  
SAN FRANCISCO

Sampler/Technician: WOLF

Casing/Borehole Diameter (inches)	0.75/1.75	2/8	4/8	4/10	6/10	6/12
Casing/Borehole Volumes (gallons/foot)	0.02/0.13	0.2/0.9	0.7/1.2	0.7/1.6	1.5/2.2	1.5/3.1

Well No. <u>MW1</u>	Well No. _____
A. Total Well Depth <u>15</u> Ft.(toc)	A. Total Well Depth _____ Ft.(toc)
B. Depth To Water <u>8.15</u> Ft.	B. Depth To Water _____ Ft.
C. Water Height (A-B) <u>6.85</u> Ft.	C. Water Height (A-B) _____ Ft.
D. Well Casing Diameter <u>2.0</u> In.	D. Well Casing Diameter _____ In.
E. Casing Volume Constant (from above table) <u>0.2</u>	E. Casing Volume Constant (from above table) _____
F. Three (3) Casing or Borehole Volumes (CxEx3) <u>4.11</u> Gals.	F. Three (3) Casing or Borehole Volumes (CxEx3) _____ Gals.
G. 80% Recharge Level [B+(ExC)] <u>9.52</u> Ft.	G. 80% Recharge Level [B+(ExC)] _____ Ft.
<u>Purge Event #1</u> Start Time: <u>0850</u> Finish Time: <u>0900</u> Purge Volume: <u>4.5</u>	<u>Purge Event #1</u> Start Time: _____ Finish Time: _____ Purge Volume: _____
<u>Recharge #1</u> Depth to Water: <u>8.2</u> Time Measured: <u>0920</u>	<u>Recharge #1</u> Depth to Water: _____ Time Measured: _____
<u>Purge Event #2</u> Start Time: _____ Finish Time: _____ Purge Volume: _____	<u>Purge Event #2</u> Start Time: _____ Finish Time: _____ Purge Volume: _____
<u>Recharge #2</u> Depth to Water: _____ Time Measured: _____	<u>Recharge #2</u> Depth to Water: _____ Time Measured: _____
<b>Well Fluid Parameters:</b> (Casing or Borehole Volumes)	<b>Well Fluid Parameters:</b> (Casing or Borehole Volumes)
pH <u>8.15</u> <u>7.82</u> <u>7.72</u> <u>7.65</u> <u>7.60</u> <u>7.56</u>	pH <u>7.55</u> _____
T (°F) <u>18.4</u> <u>18.7</u> <u>18.6</u> <u>18.7</u> <u>18.7</u> <u>18.6</u>	T (°F) <u>18.7</u> _____
Cond. <u>711</u> <u>845</u> <u>837</u> <u>831</u> <u>821</u> <u>823</u>	Cond. <u>822</u> _____
DO <u>11.3%</u> <u>0.99 mg/L</u>	DO _____
Turbidity _____	Turbidity _____
ORP _____	ORP _____
<b>Summary Data:</b> Total Gallons Purged: <u>4.5</u> Purge device: <u>DC 6040</u> Sampling Device: <u>DISP BAILER</u> Sample Collection Time: <u>0930</u> Sample Appearance: <u>SILTY</u>	<b>Summary Data:</b> Total Gallons Purged: _____ Purge device: _____ Sampling Device: _____ Sample Collection Time: _____ Sample Appearance: _____
Drums Remaining Onsite: <u>0</u>	Total Volume: _____ Gals. (Show Location on Site Plan)